

Jointness by Design,



Soldiers on flight deck of
USS Dwight D. Eisenhower.

U.S. Navy (Martin Maddock)



U.S. Air Force (Nydia Alinsworth)

Since the passage of the Goldwater-Nichols Act in 1986 it has become politically incorrect to question jointness as *the* preeminent way for the military to do business as a whole. Jointness has also become a panacea for Congress and others in reprioritizing declining defense budgets. As a result, civilian officials and military leaders are accelerating this already fast-moving concept.

NOT ACCIDENT

By MICHAEL C. VITALE

Even though jointness was the *raison d'être* for Goldwater-Nichols, it has never been defined systematically or developed conceptually, as Seth Cropsey noted in "Out of Joint" in the inaugural issue of *JFQ*. It has been invoked to universally justify any and all of the intents identified in that legislation which has created a perception within the military that its overall object was to make jointness an end in itself. While the conduct of recent operations shows major improvements,

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jointness still lacks the theoretical underpinning to resolve all the explicit intents of Goldwater-Nichols.

Jointness is not an end in itself, but it is more than a buzz word. Since the goal of jointness is to enhance military operations, a process is

needed to efficiently manage its evolution. This can be done by defining jointness precisely, framing the concept of jointness holistically, and devising a process to assess its evolution analytically. This would lead to jointness by design, not accident.

The Problem

Overall, Goldwater-Nichols has enhanced the warfighting capabilities of the Armed Forces. Practically speaking, it has bounded the concept of jointness within the context of joint operations, particularly in terms of combat.

Therefore the purpose of jointness as it evolves should be directed toward enhancing the effectiveness of operations.

The lack of a theoretical foundation, however, has resulted in a trial and error approach for addressing problems across the range of joint issues. Admiral William Owens, the Vice

Chairman, has stated that experimental approaches are the only practical means of determining how to improve jointness. Unfortunately this has led the Joint Staff, combatant commands, and services to derive coordinated joint processes (in doctrine, training, requirements, et al.) that are stovepiped—isolated from one another instead of thoroughly integrated. While many factors affect jointness, these processes have the greatest impact, and their inefficient design suboptimizes the course of jointness. Not surprisingly, after eight years of nonintegrated processes, the Chairman has said that he is unimpressed with the level of joint warfighting, particularly in terms of doctrine, training, requirements, and readiness.¹

One way to explain the problems these poorly integrated processes cause for jointness is by using a football analogy. Some parts of the game of jointness have been well defined while others have not. The following items have been established since 1986. First, the players (services) have signed multiyear contracts to play on one team (meaning no free agency), though their equipment is funded by boosters (Congress). Second, based on scouting

Commander Michael C. Vitale, USN, is the prospective commanding officer of USS John S. McCain. He served on the Joint Staff before attending the National War College where he completed this essay.

reports, management (Chairman, Vice Chairman, and Joint Staff) reviews expensive purchases by players to ensure the equipment meets collective team needs (requirements). A change in management policy has started to directly affect *all* the equipment each player buys for himself.² Third, there is one approved play book (doctrine and tactics, techniques, and procedures) with new plays steadily being written and old ones being revised, although at a slow pace. Fourth, the team practices together more regularly to prepare for each opponent (training and exercises). Fifth, after each game, management and the coaching staff watch postgame films to remedy mistakes (evaluation and analysis). Sixth, the players, coaching staffs, and management are attending schools together to make the team more cohesive (professional military education).

While the team has won several games based on this model, there is still information that players, coaches, management, and the owner lack about the game. While the end zone represents the goal of jointness (enhancing the effectiveness of operations) and can be easily understood, the team does not know the shape of the field. For example, no one has ever specifically defined or explained jointness for players, coaches, management, or the owner. The equivocal definition of jointness supports numerous explicit intentions of Goldwater-Nichols. Only by defining jointness consistently can the team work more efficiently together.

Next, the team has trouble finding the sidelines (football has two dimensions, but jointness has several). If jointness is a way to enhance the effectiveness of military operations, boundaries must be established to define the dimensions in which it operates. Senior leaders can then determine the components in these dimensions and identify relationships among them. This information can then be used to develop a process to measure the effects of various changes on jointness.

Moreover, there are no systematic yardmarkers on the field to tell the team whether they are headed toward the end zone. Markers do not measure the distance to the end zone in themselves, but rather establish minimum

benchmarks needed to make jointness as efficient as possible. Such benchmarks enhance effectiveness and moves the team closer to the end zone. One organizational benchmark of a perfect system of jointness, for example, would be to ensure that functional

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joint processes (doctrine, planning, training, etc.) used by unified commands and the Joint Staff also are used by the services for their particular functional processes (that is, the joint doctrine development process would be used to produce service doctrine). This benchmark has major implications for the Armed Forces, but it would also dramatically increase the efficiency and hence the effectiveness of jointness. Thus, establishing the most efficient benchmarks for jointness is required.

There are no linesmen marking the progress of the ball as it moves down the field. Given efficient benchmarks, there is no systematic means of determining if the effectiveness of jointness is enhanced over time. Making this judgment requires an analytical procedure that examines the components and processes of jointness,

determines their relationship with each other, and decides how these processes should be made more efficient.

Finally, perhaps the most critical problem with jointness today is the conceptual void for choosing players for a particular game. Beyond current

service roles and functions, professional military knowledge, budgetary constraints, and obvious political influence, jointness provides no theoretical or practical

methodology for choosing the combination of players best suited to face a particular opponent (this goes to the heart of joint power theory which combines land, sea, air, and space-power synergistically to create power that is greater than the sum of its parts). Unfortunately, the current concept of jointness provides no intuitive guidance except to ensure that every opponent faces a joint team, thereby raising jointness from a *way* to conduct operations to an *end* in itself. Solving this problem is beyond the scope of this article, but it requires continued study.

Many other aspects of jointness can be illustrated by this analogy, but the point is the same: because the concept of jointness is not holistically designed, the Armed Forces continue to



Embarking for Agile Provider '94.

U.S. Navy (Robert N. Scoggin)

Seabees arriving
in the Middle East.



U.S. Army (Michael Hagren)

address questions of jointness empirically. As a result, institutionalizing it successfully will take much longer and may not be as effective.

A Definition for Jointness

In today's environment, jointness appears to be synonymous with joint military operations. However, Joint Pub 1-02 defines *joint* as "... activities, operations, organizations, etc., in which elements of more than one service of the same nation participate." This is a holistic meaning that covers all contexts; thus the term *jointness* should be used in a holistic sense, not just in the context of military operations.

In defining jointness, the critical question is what makes military operations more effective when conducted jointly? The answer must be extrapolated from the history of military operations. Fortunately, this history has been officially synthesized (albeit with a leap of faith) and codified in contemporary joint doctrine.

To arrive at a definition that is all encompassing rather than focused on operations, we must first look at joint doctrine, which "offers a common perspective from which to plan and operate, and fundamentally shapes the way

we think about and train for war" (according to the first edition of Joint Pub 1). Its point is to "distill insights and wisdom gained from our collective experience with warfare" into basic principles to guide the employment of joint forces. Since its conception in 1986, this has resulted in two genres of publications: joint doctrine and joint tactics, techniques, and procedures (JTTP). The former present principles and the latter address actions and methods to implement joint doctrine and describe how joint forces are to be employed.

A survey of fifty joint publications under development and fifty approved reveals only two that provide any conceptual, all encompassing discussion of joint warfare or joint operations: Joint Pub 1, *Joint Warfare of the U.S. Armed Forces*, approved in 1991, and Joint Pub 3-0, *Doctrine for Joint Operations*, the keystone volume in the operations series that underwent a long period of development before being approved in 1993. Readers of these two publications can draw different interpretations regarding the principles of joint warfare; however, those found below are based on characteristics that allow joint forces to be more effective than single-service forces. They do not restate doctrine, but rather synthesize various principles, concepts, and ideas

from both documents with the aim of revealing the true nature of jointness.

First, based on unity of effort, jointness seeks to focus all the energy of the Armed Forces across the full range of military operations, throughout all the levels of war (strategic, operational, and tactical), in every environment (peace, crisis, and war), toward enhancing the effectiveness of military operations. While this centers on joint combat operations, it can also be applied to all other joint military activities, including those conducted in peacetime.

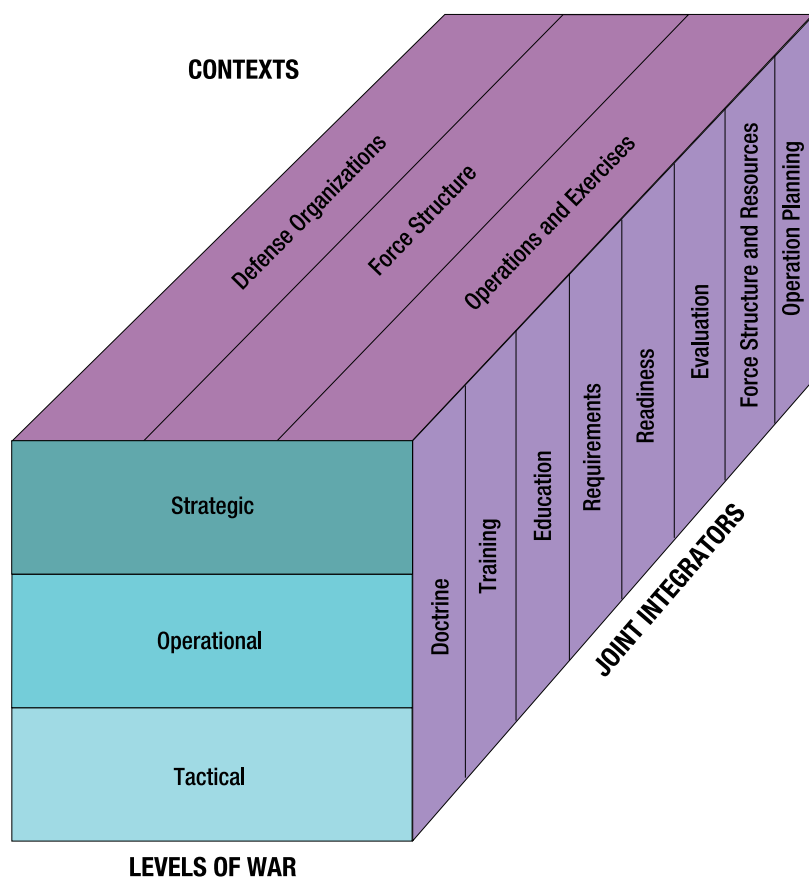
Second, joint forces provide commanders with multidimensional capabilities (land, sea, air, space, and special operations) that are more effective than uni-service forces by providing a wider range of operational and tactical options which pose multiple, complex problems for an enemy.

Last, multiple service capabilities allow an innovative JFC to combine joint capabilities, tactics, techniques, and procedures in asymmetrical as well as symmetrical ways synchronized to produce a total military impact greater than the sum of its parts.³ Achieving this effect is the most important tenet of jointness since it allows JFCs to present few exploitable seams while taking advantage of enemy weak points. In addition, this synergism can be compounded as the effects are synchronized and integrated throughout the theater, including the rear area.

The synergistic effects of synchronized joint forces are not limited to operations but include other military activities. For example, this synergism can come from synchronizing the key "joint integrators," defined as those common joint functions that focus and integrate the efforts of the Armed Forces in preparing for and conducting military operations. Besides joint doctrine, these include joint training and exercises, professional military education, operation planning, force structure and resource planning, evaluation, requirements, and readiness.

Hundreds of examples illustrate how these integrators affect military operations. One is the synergistic effect of synchronized joint military education, which increases cooperation among all officers at the expense of

Framework for Jointness



service parochialism and is a key intent and successful result of the Goldwater-Nichols Act. When this is coupled with teaching newly approved joint doctrine at these institutions, jointness is enhanced significantly. Therefore, neglecting to systematically focus the efforts of all joint integrators fails to maximize one of the most important characteristics and inherent strengths of jointness.

Given this, we can begin to define jointness through generalizations. First, it is a focused effort by the Armed Forces across all levels of war. Second, while it primarily relates to the use of joint forces to conduct military operations, it should embrace all joint activities. Third, joint forces are more capable than uni-service forces because

their inherent multidimensional capabilities offer more options to JFCs. Fourth, JFCs must synchronize capabilities for synergistic effectiveness. Fifth, for jointness to be optimized, synchronization must be conducted across all joint integrators, not just joint operations. Jointness then can be defined as a holistic process that seeks to enhance the effectiveness of all military operations by synchronizing the actions of the Armed Forces to produce synergistic effects within and between all joint integrators at every level of war.

A Framework and Process

With that definition we can see that the framework of jointness contains three dimensions: the contexts of jointness, doctrinal levels of war, and joint integrators. As mentioned earlier,

joint integrators are common joint functions that focus and integrate the efforts of the Armed Forces as they prepare for and conduct joint military operations. This dimension of the framework includes eight established joint integrators: doctrine, training, operational planning, education, readiness, force structure and resource planning, evaluation, and requirements.

The levels-of-war dimension helps decisionmakers to visualize a logical flow of operations, allocate resources, and assign tasks.⁴ The levels are usually divided into strategic, operational, and tactical. Although there are no limits or boundaries between them—given the information systems available to both decisionmakers and the public today—the levels undergo a serious compression or flattening out. This phenomenon blurs distinctions among the levels more than before, making it harder to identify unique processes.

The contexts of jointness refer to settings in which jointness could be applied by CJCS and JFCs to enhance the effectiveness of joint military operations. As indicated, this occurs mainly in joint operations, but two other areas directly affect joint force operations, namely, force structure and defense organizations. Force structure refers to the number, size, and composition of the units that make up the Armed Forces (both personnel and equipment). Defense organizations refer to institutions that primarily control processes that directly or indirectly affect joint military operations. Typically, they include, but are not limited to, the Office of the Secretary of Defense, Joint Chiefs of Staff, Joint Staff, combatant commands, defense agencies, and services. Also, as exercises are designed to emulate operations, they are included in the context of joint operations. In sum, the contexts used in the framework of jointness are joint operations and exercises, force structure, and defense organizations.

With jointness thus defined and framed (see figure), we must develop the analytical process for continually evaluating its evolution. A process should not be formed without understanding the system on which it is based and a system cannot be shaped without knowing how it will function.

Thus, a vision of the future system is the first step. This is critical because one must understand how all components among the dimensions have interfaced in the past as well as how they should be combined to achieve the greatest efficiency and effectiveness in the future.

Next we must survey jointness by breaking it into component blocks and identifying their contents. (The individual blocks are located where components of the three dimensions converge; for instance, blocks are found where joint doctrine, organizations, and the strategic level intersect.) The

joint forces get doctrine two years after new operational capabilities

contents of each block would include all the joint processes (broken down to their respective inputs, outputs, constraints, and resources) whose interactions directly or indirectly affect military operations. Next, the connections (or interfaces) between every element of each process within the block are identified to determine where inputs or outputs for each process are located. Once the contents of blocks are identified, the interfaces leading from each block must be connected with the appropriate processes in other blocks.⁵

After every joint process in the framework is identified, the next step is to determine where the current ones are inefficient. The analyst must first identify all the benchmarks of each process and determine which are acceptable or must be modified, also which are missing and must be established. Then analysts can determine needed changes for each process in the framework. Recommended changes can then be gamed to determine if they increase the efficiency of jointness. If validated, they can at last be implemented.

While it is beyond the scope of this article to survey jointness (identifying all its processes, interfaces, and disconnects as well as establishing all the benchmarks within the framework), it is useful to provide a comprehensive example of how the framework could enhance the effectiveness of jointness. The following example

shows how an inefficient benchmark can lower effectiveness.

This established benchmark (yardmarker) requires joint doctrine to be developed for extant capabilities.⁶ Joint forces thus get joint doctrine two years after new joint operational capabilities. An initial look at the current framework reveals that two joint processes affect this yardmarker, the development of joint doctrine and requirements. Further analysis reveals no relationship between the requirements process and doctrine development, which is unfortunate. For example, two joint surveillance target attack radar system (JSTARS) aircraft (under development) were rushed to the Persian Gulf during Desert Storm to enhance coalition surveillance capabilities.

Virtually none of the forces in theater were aware of JSTARS capabilities or had an operational concept to employ it. More importantly, these forces had not developed trust in the data which this system produced to fully exploit it. Most of these problems were eventually overcome and the aircraft yielded crucial information that contributed to success on the ground. But operational concepts developed while learning how to employ these aircraft could have been mitigated had some conceptual doctrine been developed concurrently with the program and promulgated when these aircraft deployed.⁷

There are other effects. As joint forces await the approval of doctrine, they must develop ad hoc field doctrine in lieu of settled doctrine or JTTP. Once the approved doctrine appears, it may be more difficult to train these forces with it because they have developed a different way to use the capability. Moreover, after working with a capability for two years, their doctrine has operational reality and may be better. Field agents from the Joint Warfighting Center (JWFC)⁸ evaluating joint exercises have reported to the Joint Staff and combatant commands that few joint forces are using doctrinal publications and recommend an immediate revision to align them with

operational reality. This problem has an exponential quality because as the view of doctrine as outdated is reinforced among the Armed Forces, it decreases the credibility of joint doctrine.

After an initial survey of jointness, the resulting assessment would adopt a benchmark of jointness (as well as many other benchmarks) to ensure joint doctrine is approved and promulgated with new joint operational capabilities. Thus, a change in the joint doctrine development process to produce conceptual doctrine (operational concepts) for non-extant capabilities must be made. While the JWFC is tasked with developing conceptual joint doctrine, whatever process is being generated has not yet been linked with current doctrine generation. Moreover, this concept of doctrine is not specifically related to new joint programs which are funded and under development, but to new conceptual thinking about joint warfare. This change would then couple the development process to new acquisition programs as they are approved.

When a program is approved, a conceptual doctrine study would determine how the new capability would affect joint doctrine. Given the current 24-month development cycle for doctrine, this study would recommend one of four courses of action two years before the program enters the initial operating capability stage: (1) do nothing, (2) develop doctrine and/or JTTP to account for the new capability, (3) revise current doctrine and/or JTTP for the capability, or (4) pursue courses two and three. This would eliminate the lag time between extant doctrine and new capabilities.

Finally, those changes should be gamed to determine their impact on other processes and to negate their effects. Viable decisions can then be made so that they have a "value added" effect on jointness.

Given a definition, framework, and analytical process, several conclusions about jointness can be reached. First, the effectiveness of joint change is directly related to the rate of that change. For example, while the Chairman has said that the pace of joint doctrine development is too slow, that

pace also must accommodate numerous revisions in doctrine almost as soon as it is approved. Thus, before the military becomes familiar with doctrine through education, training, exercises, and operations, it changes. Yet given the evolving nature of jointness, the present 24-month development and 18-month revision cycle will constantly force joint doctrine to catch up with tactics and capabilities. The trade-off is that if both cycles are reduced, the quality of joint publications (which is directly proportional to development time) will decline.

The faster the joint environment changes, therefore, the less time there is for the military to adapt and opti-

the Chairman should task an existing thinktank to develop a plan for instituting and monitoring jointness

mize itself. Conversely, the slower change occurs, the better the chance to adapt and become more effective—at the risk of failing to optimize the latest tactics and capabilities. Hence, senior military leaders must be sensitive to the pace of change and its effect on jointness.

Second, because jointness relies on developing synergistic effects, which in turn depend on multidimensional and overlapping capabilities, there is a direct relationship between effectiveness and the capabilities available to a JFC. The greater the number of capabilities, the greater the ability to innovate and enhance the effectiveness of joint operations. Therefore, effective jointness means maintaining the greatest breadth and depth of joint and service capabilities possible. In addition, efforts to satisfy the intent of Goldwater-Nichols “for more efficient use of defense resources” by streamlining redundant service capabilities must be weighed to ensure that any consolidation will not adversely affect joint warfighting.

Third, to maximize effectiveness, joint integrators must have a common frame of reference. Some integrators share frames of reference but others do not. For instance, joint planning and training processes are based on *mis-*

sions, the doctrine process on *the range of military operations*, and the requirements process on *capabilities*. Until all frames of reference are harmonized, joint effectiveness will continue to be suboptimized.

Fourth, the Chairman should task an existing thinktank (such as the Institute for National Strategic Studies at the National Defense University) to develop a vision, definition, and plan for instituting and monitoring jointness. This should lead to a master plan for implementing a method of holistically designing jointness in the Armed Forces which, at a minimum, would have three parts. The first would consist of an initial assessment of joint-

ness by creating a permanent process for surveying it based on the framework discussed above. This process would identify all benchmarks, processes, interfaces, and disconnects in the current system, develop benchmarks for a future system, develop recommended changes to the current system, and game those changes to determine their holistic effects. This routine would be repeated until every combination of change was gamed to learn which blend added the greatest value to jointness. This package would then go to CJCS for review and approval. The second part of the plan would create a jointness oversight board comprised of former officials and retired officers with extensive joint experience to advise the Chairman on recommendations made by the process as well as to make additional suggestions. The third part would establish a permanent mechanism for nonintrusively monitoring jointness by using the framework and tracking changes to ensure their successful implementation. This would be the functional equivalent of conducting a “net assessment” of jointness.

While the above plan for a holistic concept of jointness is achievable in the short term, the real test of whether it adds value to jointness and improves the effectiveness of the Armed Forces can only be known through actual op-

erations. Given that the high number and tempo of operations experienced over the last few years will continue, it will be possible to make such a qualitative and quantitative assessment and continue to refine the design.

Lastly, the present state of jointness suggests uncertainty about its future. What will be its next level? Admiral Owens suggested in these pages that it will be reached when the Armed Forces form standing joint commands to operate continually. While this is one direction the military might take, the next step toward greater jointness may not involve moving to another level; rather it could entail continuing to conceptualize what jointness should be so that it can be designed to get us to the end zone in ten plays instead of fifty.

JFQ

NOTES

¹ Sean D. Naylor, “Shali Slams Services for Lack of Joint Doctrine,” *Navy Times*, September 12, 1994, p. 5; “Gen. Shalikashvili Sees Gap in Joint Force Ops,” *National Defense* (October 1994), p. A15.

² Bradley Graham, “Military Leaders Join Forces to Plan for Future,” *The Washington Post*, August 22, 1994, p. A15.

³ See Philip D. Shutler, “Thinking about Warfare,” *Marine Corps Gazette*, vol. 71, no. 11 (November 1987).

⁴ Department of the Army, FM 100-5, *Operations* (Washington: Government Printing Office, June 1993), p. 6-1.

⁵ Available DOD modeling programs include Integration Definition Language (see Federal Information Processing Standards 183 and 184).

⁶ *Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program*, Joint Pub 1-01, chapter 1 (Washington: Government Printing Office, July 1992), p. I-2.

⁷ Thomas A. Keaney and Eliot A. Cohen, *Gulf War Air Power Survey Summary Report* (Washington: Government Printing Office, 1993).

⁸ Based on its draft “Activation Plan” (October 27, 1994), the JWFC mission is to “assist the CJCS, CINCs, and service chiefs in their preparation for joint and multinational operations in the conceptualization, development, and assessment of current and future joint doctrine and in the accomplishment of joint and multinational training and exercises.”